REMARKS

Status of the Claims

Claims 1-5, 7-15, 20, 25-28, 31, 32, 34, 47-51, 53 and 54 are pending in the present application, with Claims 37-46 having been previously canceled, Claims 6, 16-19, 21-24, 29, 30, 33, 35, 36, and 52 having been canceled herein, and new Claims 53 and 54 having been added herein. Claims 1, 20, 25, 31, 34, 47, 48, 49, 50, and 51 have been amended to more clearly define the invention.

Summary of Telephone Interview with the Examiner

On November 8, 2007, Examiner Suhol and applicant's attorney (Michael C. King, Registration No. 44,832) discussed the restriction requirement, the Markush based rejection, and the Kimura and Takahashi references.

Applicant's attorney would like to thank Examiner Suhol for taking the time to discuss the issues noted above during the Telephone Interview. While no specific agreements were reached, the discussion was quite helpful in advancing prosecution of the application.

Restriction Requirement

Examiner Suhol has noted that independent Claims 1 and 25 do not conform to the species election made earlier in the prosecution. While the above-noted Telephone Interview has clarified Examiner Suhol's position, for the record, applicant notes that the version of Claims 1 and 25 objected to by Examiner Suhol had previously been discussed with the former examiner of record, who had indicated that such claims would be acceptable.

Nevertheless, applicant has amended Claims 1 and 25 to address the restriction issue raised by Examiner Suhol.

Claims 17-19, 21-24, 33 and 35 have been identified by the Examiner as having been withdrawn as being directed to a non-elected species, and have been canceled herein.

Claims 12, 14-15, 20, and 31 have also been identified by Examiner Suhol as being directed to a non-elected species. Applicant has not canceled such claims, because applicant believes their corresponding independent claims (Claim 1 for Claims 12, 14-15, and 20; and Claim 25 for Claim 31) are generic to the elected species, as well as some of the non-elected species, as discussed below.

Rejection of Claims 1-5, 26-27, 32, 47, 50 and 52 under 35 U.S.C. § 112

The Examiner has rejected Claims 1-6, 13, 16, 25-30, 32, and 34 as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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The Examiner asserts that Claims 1 and 25 are improper Markush claims because they include the phrase *consisting essentially of* instead of the phrase *consisting of*. Since applicant has amended independent Claims 1 and 25 by eliminating the Markush language to which the Examiner objected and to address the species restriction discussed above, the indefiniteness rejection is moot and should be withdrawn. These amendments cure the asserted defects of dependent Claims 2-5, 13, and 26-28.

Claims 6, 16, 29, and 30 have been canceled; thus, their rejection is moot and should be withdrawn.

With respect to Claim 34, applicant has amended Claim 34 to depend from Claim 32 rather than Claim 25, thereby providing proper antecedent basis for "*said means*."

Rejection of Claims 8-9, 47, 49, and 50-52 under 35 U.S.C. § 102(b)

The Examiner has rejected Claims 8-9, 47, 49, and 50-52 as being anticipated by U.S. Patent No. 6,715,334 (Kimura). The Examiner asserts that Kimura discloses a device equivalent to what applicant recites in these claims. Applicant disagrees for the following reasons.

Claim 47 has been substantially amended and now recites a first hinge assembly and a second hinge assembly, oriented as illustrated in applicant's FIGURES 4-6 (i.e., at each of two different latitudinal ends, where each latitudinal end is orthogonal to opposed inner edges of the first and second working surfaces). Significantly, such hinge assemblies "***pivotally couple the first and second working surfaces together,*** *such that a rotational displacement of one of said first and second working surfaces results in a corresponding rotational displacement of the other one of said first and second working surfaces, but in an opposite rotational direction, each such hinge assembly being disposed generally orthogonal to the longitudinal axis of the bending die.*"

While the Examiner is correct that Kimura discloses first and second working surfaces that can be rotated relative to a frame, the sector gear/rack gear combinations disclosed by Kimura simply cannot be considered to be equivalent to a hinge assembly that couples the working surfaces together. Kimura's rack and sector gear combination rotatably support the bottom dies, *but do not link the bottom dies together.*

Note that the hinge assemblies recited in Claim 47 specifically couple the first and second working surfaces ***together***. Significantly, bottom dies 21 and 22 disclosed by Kimura *are not physically coupled together by any structure.* In other words, in Kimura's device, bottom die 21 could be deflected independently of bottom die 22. Note in Kimura's device, both bottom dies are deflected downwardly

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simultaneously because presser die 12 simultaneously engages bottom dies 21 and 22, not because a hinge assembly *pivotally couples said first and second working surfaces together, such that a rotational displacement of one of said first and second working surfaces results in a corresponding rotational displacement of the other one of said first and second working surfaces.*

Takahashi and Schubert each disclose a piano hinge that physically couples a first and second working surface together. However, this piano hinge assembly is not equivalent to the structure recited in Claim 47 (the piano hinge of these references is configured differently, because it couples the inner edges of plate dies together, as opposed to the hinge configuration shown in FIGURES 4-6 (which includes a first and second hinge assembly disposed at opposed latitudinal ends)). The cited art does not teach or suggest the hinge configuration shown in FIGURES 4-6 (Claim47 articulates details of the hinge configuration), and the rejection of independent Claim 47 and the claims dependent thereon should be withdrawn.

Claim 49 is similar to Claim 47, and further provides that the hinge assemblies include sector gears, such that a first sector gear and a second sector gear are physically linked together by the hinge, where the first sector gear supports the first working surface, and the second sector supports the second working surface. While Kimura discloses sector gear/rack gear combinations to support bottom dies, Kimura does not teach or suggest linking a sector gear supporting one die to a sector gear supporting a different die, so as to link the motion of the dies together.

As noted above, Schubert and Takahashi disclose the use of hinges that physically couple the working surfaces together, but the hinge disclosed by each of these references is not equivalent to the hinge configuration recited in applicant's claims. Claim 49 thus distinguishes over the cited art for substantially the same reasons as Claim 47.

Claim 50 recites a bending apparatus enabling a dimension of a gap between two working surfaces (dies) to be selectively adjusted, by adjusting a position of first and second portions of a frame.

The Examiner has asserted that Kimura discloses a frame having an equivalent functionality, as provided by wedges/taper pins 33. Respectfully, that assertion is not correct, because the wedges disclosed by Kimura perform an entirely different function. Kimura explicitly teaches that taper pins 33 perform the function of enabling the bottom dies to be selectively removed. When the taper pins are removed, the bottom dies can be moved away from the guide blocks, and the sector gears can be disengaged from the linear rack gears. When the bottom dies are installed, the taper pins ensure proper

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meshing of the teeth in the sector gear and the rack gears. Significantly, the taper pins ***cannot be used***, and are not taught as being usable, to selectively adjust a gap between the bottom dies, because: (1) there simply is no structure that enables a position of the taper pin to be selectively adjusted by inserting it at a plurality of different positions (i.e., the taper pin achieves an interference fit in the structure, such that the taper pin is only properly positioned when such an interference fit is achieved); and, (2) the structure of Kimura's apparatus relies on the interference fit of the taper pins to ensure that the gear mesh between the rack gears and sector gears is correct (such that ***if*** the taper pins were to be partially removed to enable a gap between the bottom dies to be adjusted, the gear mesh between the sector gears and the rack gears ***would no longer be correct***, and the apparatus would not function properly, since the bottom dies would be loosely held).

With respect to the function of the taper pins, Kimura discloses the following:

> The guide blocks 31 and 31 are fixed by being pressed toward the vertical center line X by taper pins 33 and 33 inserted between blocks 32 and 32 fixed to a base frame 34 with bolts not shown. The guide blocks 31 and 31 are in a L-shape in the front view of FIG. 4A, and lower portions 31b of the guide blocks 31 and 31 extend horizontally to be away from the guide surfaces 31a. Slide guides 36 fixed to the base frame 34 with bolts not shown abut to top surfaces of the lower portions 31b. By removing the taper pins 33 and 33 shown in FIG. 3, the lower portions 31b of the guide blocks 31 and 31 slide along the slide guides 36 and the guide blocks 31 and 31 can move in a direction to be away from the vertical center line X. Accordingly, by removing the taper pins 33 and 33, a pair of the bottom dies 21 and 22 move away from the guide blocks 31 and 31, and mesh of the circular arc racks 25 and 25 and the straight-line racks 35 and 35 being the meshing means 30 is released, whereby a pair of the bottom dies 21 and 22 can be easily removed. 3, incorporated by reference herein. (See column 6, lines 15-32.)

Clearly, the function of the taper pins in Kimura's apparatus ***is not*** to selectively enable a gap between the bottom dies to be adjusted (but rather their function is to ensure the proper positioning and securing of the bottom dies, the rack gears and the sector gears). Nor, is there any evidence that such a modification would have been obvious to an artisan of ordinary skill. Accordingly, Claim 50 patentably distinguishes over the cited art, and the rejection of Claim 50 should be withdrawn.

Claim 51 distinguishes over the cited art for substantially the same reasons as Claim 50. Claim 52 has been canceled herein as being a substantial duplicate of Claim 51.

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Rejection of Claims 1, 3, 5-6, 8-10, 13, 16, 25-26, 29-30, 32, 34, 36, 47, and 49 as Being Obvious

The Examiner has rejected Claims 1, 3, 5-6, 8-10, 13, 16, 25-26, 29-30, 32, 34, 36, 47, and 49 as being obvious over U.S. Patent No. 5,365,766 (Takahashi) in view of U.S. Patent No. 6,715,334 (Kimura). The Examiner asserts that Takahashi discloses most of the claimed elements, and Kimura discloses a bending device including sector gears and rack gears, such that it would have been obvious to an artisan of ordinary skill to combine elements from each reference to achieve an equivalent invention. Applicant respectfully disagrees for the following reasons.

Claim 1 as amended recites in part (the claim language has been paraphrased to facilitate discussion):

a first movable component supported by a first sector gear engaging a first rack gear,

a second movable component supported by a second sector gear engaging a second rack gear,

a hinge assembly coupling the first sector gear to the second sector gear, such that a rotational displacement of one of said first and second working surfaces results in a corresponding rotational displacement of the other one of said first and second working surfaces, but in an opposite rotational direction.

Takahashi and Kimura each disclose first and second movable components (plate dies). Takahashi employs a piano hinge that couples the first and second movable components together, so that the corresponding rotational movement is obtained. Kimura discloses a rack and sector gear combination. Significantly, Kimura does not teach or suggest using a hinge that couples sector gears attached to different plate dies together. A combination of Takahashi and Kimura would logically result in plate dies coupled together using a piano hinge extending along the length of the plate dies, where the plate dies are supported by the sector gears and rack gears of Kimura. Absent the impermissible application of hindsight, there appears to be no reason to replace the piano hinge disclosed by Takahashi with a hinge that couples sector gears attached to different plate dies together, particularly because Kimura does not teach or suggest using a hinge to couple adjacent sector gears attached to different plate dies together. For the reasons already discussed above, the piano hinge of Takahashi is not equivalent to the hinge recited in applicant's claims.

It should be noted that applicant disagrees that it would have been obvious to combine Takahashi and Kimura, because Kimura relates to a structure optimized to bend thick walled pipe, while Takahashi is optimized to bend relatively thin sheet metal. This issue is discussed in greater detail below.

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Even if the references are combined as suggested by the Examiner, a structure equivalent to that recited in applicant's claims cannot be achieved without employing hindsight. Accordingly, the rejection of Claim 1 as being obvious in view of Takashi and Kimura should be withdrawn. Claims 2-5, 12-15, and 20 each depend from Claim 1 and are patentable for at least the same reasons.

While Claims 12, 14, 15, and 20 read on a non-elected species, Claim 1 is generic to both the elected species and the non-elected species defined by Claims 12, 14, 15, and 20.

Claim 25 as amended recites in part (to facilitate discussion some of the claim language has been paraphrased):

a first die supported by a first sector gear engaging a first rack gear,

a second die supported by a second sector gear engaging a second rack gear,

a hinge assembly coupling the first sector gear to the second sector gear, such that a rotational displacement of one of said first and second working surfaces results in a corresponding rotational displacement of the other one of said first and second working surfaces, but in an opposite rotational direction, without requiring the hinge assembly to extend between the inner edges of the first and second dies.

As discussed above with respect to Claim 1, Takahashi employs a piano hinge that couples the first and second working surfaces together, while Kimura discloses a rack and sector gear combination, but without any teaching that the sector gears (attached to different dies) are linked together with a hinge. A combination of Takahashi and Kimura would logically result in plate dies coupled together using a piano hinge extending along the length of the plate dies as taught by Takahashi, and the plate dies would be supported by the sector gears and rack gears as taught by Kimura. In such a configuration, the piano hinge would extend between the opposed inner edge surfaces of the dies. However, the language in Claim 25 now recites that the hinge coupling the movement of the dies together does NOT extend between the two dies (i.e., the hinge recited in the claims cannot be a piano style hinge). Absent the impermissible application of hindsight, there appears to be no reason to replace the piano hinge disclosed by Takahashi with a hinge that couples sector gears attached to different plate dies together as recited by applicant's claims, particularly because Kimura does not teach or suggest using a hinge to couple adjacent sector gears attached to different plate dies together in this manner.

Significantly, by not using a piano hinge as disclosed by Takahashi, applicant's approach enables a gap between the first and second dies to be used to form a channel in a piece of sheet metal, generally as

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indicated in applicant's FIGURE 10C. The cited art simply does not teach or suggest alternative hinge configurations including sector gears that enable a gap to be achieved between the opposed dies.

Even if the references are combined as suggested by the Examiner, an equivalent structure cannot be achieved without employing hindsight. Accordingly, the rejection of Claim 25 as being obvious in view of Takashi and Kimura should be withdrawn. Claims 26-28, 31, 32, and 34 each depend from Claim 25, and are patentable for at least the same reasons. Claims 29, 30, 33, 35 and 36, each of which originally depended from Claim 25, have been canceled herein.

While Claim 31 reads on a non-elected species, Claim 25 is generic to both the elected species and the non-elected species of Claim 31.

Claim 47 as amended recites in part (to facilitate discussion some of the claim language has been paraphrased):

a first working surface including a first inner edge and a first and second latitudinal end, the first inner edge being substantially orthogonal to the first and second latitudinal ends;

a second working surface including a second inner edge and a third and fourth latitudinal end, the second inner edge being substantially orthogonal to the third and fourth latitudinal ends, the first and second inner edges being disposed in a facing relationship;

a first hinge assembly disposed proximate the first and third latitudinal ends;

a second hinge assembly disposed proximate the second and fourth latitudinal ends, such that the first and second hinge assemblies ensure that a rotational displacement of one of the first and second working surfaces results in a corresponding rotational displacement of the other one of the first and second working surfaces, but in an opposite rotational direction.

As discussed above with respect to Claim 1, Takahashi employs a piano hinge that couples the first and second working surfaces together (*by extending between the first and second inner edges*). Kimura discloses rack/sector gear combinations, which function as hinges to enable the first and second bottom dies to rotate. However, it must be emphasized that the rack/sector gear combinations disclosed by Kimura do NOT couple the motion of the paired dies together.

Essentially, Kimura's rack/sector gear combinations ("hinge assemblies") enable the bottom dies to move independently of each other. Referring to Kimura's Figure 7C, the only reason the bottom dies are simultaneously deflected is because ram 12 exerts a force on pipe 111a, which in turn, exerts a force on each bottom die at the same time. The "hinge" assemblies disclosed by Kimura enable the bottom dies

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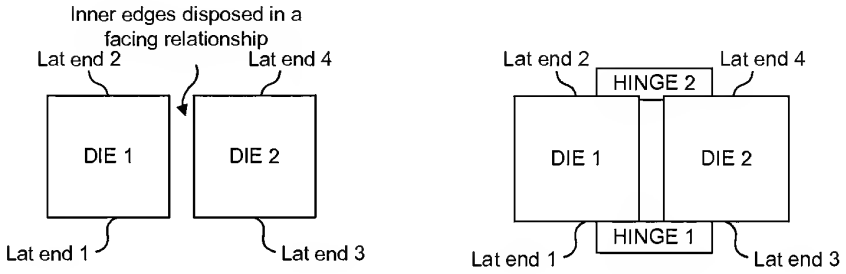
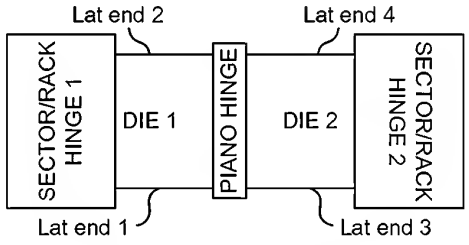
to move, but those hinge assemblies ***in no way*** link motion of the first bottom die to the second bottom die. If one were to exert a force only on one of the bottom dies, the other bottom die would not move. In contrast, referring to applicant's FIGURES 4-6, deflection of one of the plate dies necessarily causes a similar deflection of the other plate die, because the hinges couple the plate dies together, but without using the piano hinge configuration of Takahashi.

The following Figures may facilitate an understanding of the structural differences between the prior art and the claimed invention.



CLAIM 47



TAKAHASHI/KIMURA

Clearly, the combination of Kimura and Takahashi does not achieve a structure equivalent to that recited by applicant's claims. Accordingly, the rejection of Claim 47 as being obvious in view of Takashi and Kimura should be withdrawn.

Claim 49 as amended recites in part (to facilitate discussion some of the claim language has been paraphrased):

a first working surface;

a second working surface disposed adjacent to the first working surface;

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a first hinge assembly comprising a first sector gear and a second sector gear that are physically linked together, the first sector gear being attached to the first working surface, and the second sector gear being attached to the second working surface; and

a second hinge assembly comprising a third sector gear and a fourth sector gear that are physically linked together, the third sector gear being attached to the second working surface, and the fourth sector gear being attached to the second working surface, such that the first and second hinge assemblies ensure that a rotational displacement of one of the first and second working surfaces results in a corresponding rotational displacement of the other one of the first and second working surfaces, but in an opposite rotational direction, without requiring the hinge assemblies to extend between the inner edges of the first and second dies.

As discussed above with respect to Claim 47, Takahashi employs a piano hinge that couples the first and second working surfaces together (*by extending between the first and second inner edges*). Kimura discloses rack/sector gear combinations, which function as hinges to enable the first and second bottom dies to move, albeit without coupling the motion of one bottom die to the other.

As recited in Claim 49, each hinge assembly includes a first sector gear attached to the first die (working surface), and a second sector gear attached to the other die (working surface). Such a configuration is entirely different than the configuration disclosed by Kimura, in which both sector gears in any single hinge assembly are attached to the same die. Thus, the hinges disclosed by Kimura do NOT ensure that the bottom dies move in concert.

Note the language in Claim 49, which recites that the hinge coupling the movement of the dies together does not extend between the two dies (i.e., the hinge cannot be considered a piano style hinge). Absent the impermissible application of hindsight, there appears to be no reason to replace the piano hinge disclosed by Takahashi with a hinge that couples sector gears attached to different plate dies together, particularly because Kimura does not teach or suggest using a hinge to couple adjacent sector gears attached to different plate dies together. Significantly, applicant's recited configuration does not use the piano hinge disclosed by Takahashi, and as a result, applicant's configuration enables a gap between the first and second dies to be used to form a channel in a piece of sheet metal, generally as indicated in applicant's FIGURE 10C. The cited art simply does not teach or suggest alternative hinge configurations, including sector gears, that enable a gap to be achieved between the opposed dies for forming sheet metal.

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Further, the combination of Kimura and Takahashi would result in an apparatus that includes *three* hinges, the piano hinge of Takahashi and the two sector gear based hinges of Kimura. That configuration is simply not equivalent to applicant's recited structure, and the modifications required of the prior art to achieve an equivalent structure appear to impermissibly rely on hindsight, as opposed to solving any problem recognized in the art. Accordingly, the rejection of Claim 49 as being obvious in view of Takashi and Kimura should be withdrawn.

Rejection of Claims 1, 2, 4, 25, and 50-52 as Being Obvious

The Examiner has rejected Claims 1, 2, 4, 25, and 50-52 as being obvious over U.S. Patent No. 2,433,841 (Glud) in view of U.S. Patent No. 6,715,334 (Kimura). The Examiner asserts that Glud discloses most of the claimed elements, and Kimura discloses a bending device including sector gears and rack gears, such that it would have been obvious to an artisan of ordinary skill to combine elements from each reference to achieve an equivalent invention. Applicant respectfully disagrees for the following reasons.

Claim 1 as amended recites in part (the claim language has been paraphrased for discussion purposes):

a first movable component supported by a first sector gear engaging a first rack gear,

a second movable component supported by a second sector gear engaging a second rack gear,

a hinge assembly coupling the first sector gear to the second sector gear, such that a rotational displacement of one of said first and second working surfaces results in a corresponding rotational displacement of the other one of said first and second working surfaces, but in an opposite rotational direction.

Glud and Kimura each disclose first and second movable components (rocker arms in Glud and plate dies/bottom dies in Kimura). Glud employs a curved bearing journal supporting each rocker arm to enable rotation of the rocker arms. Significantly, there appears to be no linking structure disclosed by Glud to couple the motion of the rocker arms together, nor does Kimura teach or suggest a hinge that couples the motion of different plate dies together. A combination of Glud and Kimura (ignoring for the moment the issue of why an artisan would have been motivated to combine the references) would logically result in the replacement of the curved bearing journal supporting a massive rocker configuration with rack/sector gears supporting a less massive plate die

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configuration. Such a combination would clearly lack any structure coupling the motion of the plate dies together.

In other words, absent an application of impermissible hindsight, a combination of Glud and Kimura would achieve an apparatus in which each plate die could be deflected independently of one another. Even adding Takahashi to the combination would result in an apparatus where the motion of the plate dies is coupled together using a piano hinge extending between the plate dies, which as discussed in detail above, simply is not equivalent to the recited structure in applicant's claims. Even if the references are combined as suggested by the Examiner, an equivalent structure cannot be achieved, without employing hindsight to further modify the resulting combination. Accordingly, the rejection of Claim 1 as being obvious in view of Glud and Kimura should be withdrawn. Claims 2 and 4 each depend from Claim 1, and are patentable for at least the same reasons.

Claim 25 as amended recites in part (to facilitate discussion some of the claim language has been paraphrased):

a first die supported by a first sector gear engaging a first rack gear,

a second die supported by a second sector gear engaging a second rack gear,

a hinge assembly coupling the first sector gear to the second sector gear, such that a rotational displacement of one of said first and second working surfaces results in a corresponding rotational displacement of the other one of said first and second working surfaces, but in an opposite rotational direction, without requiring the hinge assembly to substantially extend between the inner edges of the first and second dies.

As discussed above with respect to Claim 1, neither Glud nor Kimura employ any structure ensuring that the motion of the dies are coupled (i.e., such that the dies cannot be rotated independently).

A combination of Glud and Kimura would logically result in the replacement of the curved bearing journal supporting a rocker configuration with rack/sector gears supporting plate die configuration. As noted above, such a combination would clearly lack any structure coupling the motion of the plate dies together, where the hinge coupling the motion of the dies together does not extend between the dies. Accordingly, the rejection of Claim 25 as being obvious in view of Glud and Kimura should be withdrawn.

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Claim 50 recites in part (to facilitate discussion some of the claim language has been paraphrased):

a first die including a working surface, an inner edge and an outer edge;

a second die including a working surface, an inner edge and an outer edge;

a first support structure configured to rotatably support the first die;

a second support structure configured to rotatably support the second die; and

a frame coupled to and supporting said first and second support structures, the first and second support structures enabling said first and second dies to move relative to the frame....the first support structure being fixed in position relative to a first section of the frame, the second support structure being fixed in position relative to a second section of the frame, a position of said first section relative to said second section being adjustable to enable a width of a gap separating adjacent inner edges of the working surfaces of the first and second dies to be adjusted to a desired dimension.

Significantly, according to Claim 50, the apparatus includes a frame having two sections that move relative to one another, and supporting structures that do not move relative to their respective section of the frame.

It should be noted that applicant respectfully traverses the assertion that an artisan of ordinary skill could successfully combine the structure of Glud with the structure of Kimura and achieve the required adjustable gap recited by applicant's claims, for the reasons discussed in detail below. Ignoring that issue for the moment, Glud provides a structure enabling a gap between the inner edges of the working surfaces (the rocker arms) to be adjusted. Significantly, Glud provides a frame defining an interior cavity of a fixed dimension. A pair of curved bearing journals are disposed in the interior cavity, with each journal supporting one of the rocker arms. The gap between the rocker arms is adjusted by using shims. The shims are disposed in three locations: between the frame and the first curved bearing journal, between the first and second curved bearing journals, and between the second curved bearing journal and the frame. Note that no portion of the frame defining the interior cavity moves, *thus there is no first section and second section of the frame that move relative to one another*. Glud's curved bearing journals are not equivalent to applicant's recited *first section* and *second section* of the frame, because the curved bearing journals correspond to applicant's recited first and second supports that are attached to the portions of the frame that move relative to

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one another. In other words, Glud's structure enables the gap between the inner edges of the dies to be adjusted by moving the support structures that actually support the dies (using different width shims to maintain the position of the dies), while Claim 50 recites a structure that enables the gap between the inner edges of the dies to be adjusted ***by moving portions of the frame itself***.

As discussed above, Kimura does not teach or suggest any structure that enables the gap between the dies to be selectively adjusted; the taper pin disclosed by Kimura is provided solely to enable the sector gear/rack gear structure to be selectively retained or removed, and there is only one specific dimension gap that can be achieved using Kimura's structure (when the taper pins achieve an interference fit and the sector gears properly mesh with the rack gears).

Any combination of Kimura and Glud would appear to retain the fixed frame and movable support configuration of Glud discussed above, with the curved bearing journals being replaced by Kimura's sector gears/rack gears. Such a configuration is simply not equivalent to the structure recited in Claim 50, and absent the impermissible application of hindsight, there appears no reason to further modify the cited art to achieve an equivalent of what applicant recites in his claims. Accordingly, the rejection of Claim 50 as being obvious over Glud in view of Kimura should be withdrawn.

Claim 51 as amended specifically recites that the working surfaces (dies) are supported by rack gears/sector gears, and that a gap between the working surfaces is selectively adjustable. While the Examiner is correct that Kimura discloses rack/sector gears supporting dies, and Glud discloses a structure for enabling a gap between opposed dies to be selectively varied, applicant respectfully submits that the cited art does not teach or suggest *how* such a combination could be achieved, since substantial modification of either cited configuration would be required to combine them.

Significantly, the structure disclosed by Glud does not seem to be compatible with the structure disclosed by Kimura. Kimura discloses a rigid outer frame defining an interior cavity. The structural configuration (from left to right) is as follows: left frame wall/left taper pin/left rack gear/left sector gear/left plate die/right plate die/right sector gear/right rack gear/right taper pin/right frame wall. As noted above, the function of the taper pins is to ensure that the sector gears and rack gears are properly meshed (i.e., the left taper pin is forced into a gap between the left frame wall and the left rack gear, and the right taper pin is forced into a gap between the right frame wall and the right rack gear – in an interference fit). The insertion of the taper pins forces the rack gears inward,

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into the sector gears. There is no ability to selectively vary the dimension between the plate dies in Kimura's structure.

Glud discloses a structure having the following configuration (from left to right): left frame wall/left space for shims/left bearing journal/middle space for shims/right bearing journal/right space for shims/right frame wall. However, if Kimura's sector gear/rack gear support structure were introduced into Glud's frame, Kimura's taper pin structure for ensuring the proper mesh between the rack and sector gears would eliminate the gap dimensioning functionality of Glud's device. In other words, Kimura's taper pins are not compatible with Glud's shims, and the cited art provides absolutely no guidance as to how Kimura's sector gear/rack gear dies supports could be modified to ensure proper meshing of the rack gears/sector gears, yet enable the gap between the plate dies to be selectively adjustable. Thus, ***the suggested combination of references fails***, and the rejection of Claim 51 as being obvious over Glud in view of Kimura should be withdrawn.

Rejection of Claims 7 and 28 as Being Obvious

The Examiner has rejected Claims 7 and 28 as being obvious over U.S. Patent No. 5,365,766 (Takahashi) in view of U.S. Patent No. 6,715,334 (Kimura), further in view of U.S. Patent No. 5,295,385 (Murai). The Examiner asserts that Takahashi discloses most of the claimed elements, Kimura discloses a bending device including sector gears and rack gears, and Murai discloses a return spring, such that it would have been obvious to an artisan of ordinary skill to combine elements from each reference to achieve an equivalent invention. Applicant respectfully disagrees for the following reasons.

Claim 7 depends on independent Claim 47, which is patentable over the cited art generally as discussed above. Dependent claims must be patentable for at least the same reasons as the claims from which they depend, therefore Claim 7 is patentable for the same reasons as is Claim 47.

Similarly, Claim 28 depends on independent Claim 25, which is patentable over the cited art generally as discussed above. Dependent claims must be patentable for at least the same reasons as the claims from which they depend, therefore Claim 28 is patentable for the same reasons as is Claim 25.

Patentability of New Claims

New Claim 54 substantially corresponds to writing Claim 11 (to which the Examiner objected) in independent form, with modification as required to prevent any indefiniteness issue with

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respect to the number of hinges being implemented. New Claim 54 is patentable for substantially the same reasons that lead to the allowance of Claim 48 and the objection to Claim 11.

New Claim 53 corresponds to Claim 1 as previously presented. The Examiner has asserted that Claim 1 as previously presented (now Claim 53) is obvious over Takahashi in view of Kimura. Applicant respectfully submits that it would not have been obvious to make such a combination, because Kimura is not related to bending sheet metal, but to bending thick walled pipe. Thus, Kimura is not art that a person of ordinary skill in the art would consult to determine how to make the recited subject matter of applicant. More specifically, the problems to be solved in bending thick walled pipe does not appear to be sufficiently closely related to the problem of bending thin plates, (i.e., sheet metal), and an artisan familiar with Takahashi would not consider it obvious to look to Kimura to provide an alternative structure for supporting a die used to bend ***a metal plate***.

Express Request for Telephone Interview if Required to Place Case in Condition for Allowance

In view of the Remarks set forth above, it will be apparent that all of the claims in this application define a novel and non-obvious invention, and that the application is in condition for allowance and should be passed to Issue without further delay. Should any further questions remain, the Examiner is requested to telephone applicant's attorney at the number listed below, in order to expediently conclude the already extended prosecution of this application.

Respectfully submitted,

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